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Influencing knowledge workers: the power of top management

Sharmila Jayasingam
Faculty of Business and Accountancy, University of Malaya, Kuala Lumpur, Malaysia
Mahfooz A. Ansari
Faculty of Management, University of Lethbridge, Lethbridge, Canada, and
Muhamad Jantan
Corporate and Sustainable Development Division, Universiti Sains Malaysia, Penang, Malaysia

Abstract

Purpose – The purpose of this paper is to identify the key leadership characteristics (in the form of social power) needed in a knowledge-based firm that can influence knowledge workers (KWs) to participate actively in creating, sharing, and using knowledge.

Design/methodology/approach – Data measuring top leaders social power and knowledge management (KM) practices is gathered from 402 KWs representing 180 Multimedia Super Corridor status firms in Malaysia.

Findings – The analysis indicates that expert power has a positive influence on the extent of knowledge acquisition and dissemination practices. Legitimate power is found to impede knowledge acquisition practices. Furthermore, reliance on referent power no longer works in a knowledge-based context. Finally, the paper found the impact of coercive, legitimate, and reward power to be contingent on the organizational size.

Research limitations/implications – Besides leaders potential to influence, there may be other factors that could influence the extent of KM practices in organization. Further, this paper explores the power of top management, which could not be generalized to leaders from middle or lower level management. Future research should address these limitations.

Practical implications – The paper implies that knowledge leaders need to enhance certain bases of power that have the potential to improve the extent of KM practices in organizations.

Originality/value – This paper provides useful insights about the significance of leaders' power bases with emphasis on new approaches needed in knowledge-based organizations.

Keywords Knowledge organizations, Knowledge management, Knowledge capture, Knowledge sharing, Leaders, Malaysia

Paper type Research paper

Introduction

Firms are increasingly depending on the contribution of its knowledge and are implementing the best knowledge management (KM) systems to establish their competitive advantage. However, in spite of the accelerated implementation of KM technologies, most KM initiatives do not seem to bring about the much anticipated improvements (Lucier, 2003; Smith *et al.*, 2003).

In the Malaysian context, the extent of KM practices is still worryingly low (EPU, 2009). In fact, most Malaysian organizations are still lagging behind their foreign

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counterparts from leading economies (EPU, 2009). This can be attributed to the inability of organizations to grasp that the commitment of knowledge workers (KWs) towards the KM system is more important than the mere reliance on technology (Malhotra, 2002). Simply allowing access to a technologically advanced KM system will not create a change in behavior (Smith *et al.*, 2003). Instead, attention should be focused upon KWs who hold the key to improving the extent of KM practices in organizations through knowledge creation, sharing, and application (Malhotra, 2002).

Encouraging KWs to espouse KM supportive behavior requires dynamic interactions amid leadership and KM (Politis, 2005; Ribiere and Sitar, 2003). In fact, the critical success factor for most winners of the Asian Most Admired Knowledge Enterprises 2008 awards such as Astra International, Tata Steel, and Wipro Technologies was top management leadership. Although it is apparent that leadership permeates as the foundation for KM initiative success, there is surprisingly little empirical research to support the relationship between leadership behavior and KM (Politis, 2005) – more so in the Malaysian context.

To date, only a handful of researchers (Crawford, 2005; Politis, 2005; Singh, 2008) have investigated the underlying leader behavior needed to improve the extent of KM practices in organizations. However, with exceptions of the studies by Crawford (2005) and Singh (2008), the scope of the aforementioned studies was limited to specific areas in KM and did not attempt to look at KM as a holistic process that involves knowledge acquisition, dissemination, and utilization. In reality, these practices are inter-reliant processes (Janz and Prasarnphanich, 2003). Hence, there is a need to look at the process in totality. Consequently, this study intends to fill this significant gap and analyze the impact of leader behavior on the extent of each of these KM practices collectively.

Furthermore, apart from the study by Politis (2005), most researches have not attempted to expand the leadership behavior dimension to include interpersonal influence and social power. This significant gap is yet to be filled, although it is apparent that leadership in the knowledge firm involves the ability to influence those involved in KM practices (Macneil, 2003). For example, leaders should be able to influence their KWs to voluntarily share their implicit knowledge. Leaders also need to be able to exercise influence to rejuvenate the outlook of KWs towards successful knowledge acquisition (Politis, 2005). Basically, the ability to influence is crucial in developing the desired KM practices among KWs.

Hence, we believe a leader's power has a significant impact upon the extent of KM practices. The pertinent research question addressed in this research is as follows:

RQ1. Which bases of power have a positive effect on KM practices and should be embraced by knowledge leaders?

More importantly, we also intend to explore the power bases that would have an adverse effect in a knowledge-based context and thus, should be avoided by leaders. Dwelling further, we intend to determine if this relationship is affected by organization size. Basically, the discrepancy in size and operation of small- and large-firms results in incongruity in these organizations' needs for leader behavior (Yukl, 2010). In sum, the present study has two-fold objectives:

(1) to study the influence of the bases of social power of top management on the extent of KM practices (knowledge acquisition, dissemination, and utilization) in organization; and

(2) to investigate the boundary conditions (organizational size as a moderator) of this influence.

Theory and hypotheses

Power is defined as the ability to influence (Ansari, 1990; Fiol *et al.*, 2001; French and Raven, 1959). Thus, a leader's social power refers to "potential to influence" (French and Raven, 1959) as opposed to the actual use of influence tactics, which enact this potential (Aguinis *et al.*, 1994). Also, although perceptions of power are clearly affected by objective phenomena such as the right to reward and punish, a leader's potential to influence derives from KWs' recognition of the leader as powerful (Aguinis *et al.*, 2008; Farmer and Aguinis, 2005). In addition, perceptions of power can be equally or even more consequential for leaders than their actual influence behavior because:

> [. . .] simply perceiving that an individual has power to affect oneself helps create the reality of that power, insofar as one's beliefs, intentions, and actions change as a result of that perception (Farmer and Aguinis, 2005, p. 1069).

Although a number of power typologies or frameworks exist, perhaps the most influential and frequently used and cited is that of French and Raven's (1959). French and Raven's power taxonomy distinguished among the five power bases that could contribute to the agent's overall ability to influence a target. These power bases were reward, coercive, legitimate, referent, and expert.

Numerous studies have examined, the impact of these power bases on various outcomes in the organizational context (Yukl, 2010). However, with an exception of the study by Politis (2005), we are aware of no research that has examined the effect of these powers in a knowledge-based context. A detailed analysis of knowledge leaders' role readily reveals that leaders' power bases can influence the extent of KM practices (Politis, 2005; Ribiere and Sitar, 2003). Yet, it remains unclear as to what power bases are needed in a knowledge-based organization. Hence, this study aims at exploring the relationship between the top management's power bases and the extent of KM practices in organizations, as shown in the research model (Figure 1).

We now turn to the scant literature on bases of power and then derive testable hypotheses for the effectiveness of each power base for KM practices.

Legitimate power

Legitimate power is based on the belief that the agent has the right to prescribe and control others by virtue of his or her organizational position (Raven, 1992). The effect of

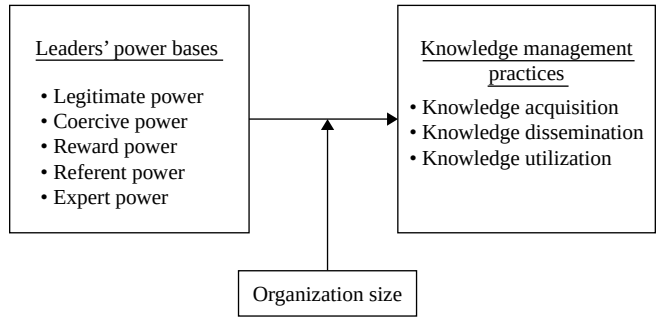

Figure 1.
Research model

legitimate power has been found to be inconsistent. Legitimate power has demonstrated weaker, yet significant, positive relationships in some situations such as reduced turnover intentions (Lo and Ramayah, 2007). However, most studies on power found legitimate power to be negatively related or unrelated to leader effectiveness (Aguinis *et al.*, 2008; Yukl, 2010).

Forstenlechner and Lettice (2007) found managers' authority to increase knowledge dissemination. However, this study was based on only one law firm, and thus limits the generalizability of the findings. On the contrary, formal authority and implementation of hierarchy was found to negatively influence the level of knowledge transfer practices (Riege, 2007) and all other KM practices (Singh, 2008). Moreover, the leader's legitimate power was found to have no effect on knowledge acquisition (Politis, 2005).

Findings of the abovementioned researches imply that leaders are expected to avoid drawing their power from their position (Amar, 2002). Fundamentally, managers can no longer depend on the traditional command and control mechanism to influence KWs (Macneil, 2003), as KWs mock at influence attempts based solely on position (Singh, 2008). Thus, we hypothesize:

H1. Leaders ascribed with greater legitimate power can adversely influence the extent of knowledge acquisition, dissemination, and utilization practices within the organization.

Coercive power

Coercive power is based on the target's perception that the agent has the ability to inflict various organizational punishments. Going beyond real physical threats, rejection, and disapproval from someone the target likes also leads to powerful coercive power (Raven, 1992). Generally, coercive power has been associated with leader ineffectiveness (Aguinis *et al.*, 2008; Elangovan and Jia, 2000; Hinkin and Schriesheim, 1989). In a knowledge-based environment that thrives on trial-and-error and flexibility in learning, leaders' coercive power may fuel similar reactions.

Reprimanding employees is a barrier for knowledge acquisition (Politis, 2005), transfer (Riege, 2007), and utilization (Jong and Hartog, 2007). A reprimand or punishment will not only obliterate KWs' initiatives to create, share, or apply knowledge but also dampen future attempts by others (Amar, 2002). Politis (2005) strongly suggests that coercive power should be avoided in knowledge-based environment. Thus, we offer the following hypothesis:

H2. Leaders ascribed with greater coercive power can adversely influence the extent of knowledge acquisition, dissemination, and utilization practices within the organization.

Reward power

Reward power is based on the target's perception of the agent's ability to control valued organizational rewards and resources. Furthermore, personal approval from someone the target really likes also results in quite powerful reward power (Raven, 1992).

Several studies reported that reward power was negatively related or unrelated with leader effectiveness (Elangovan and Jia, 2000; Hinkin and Schriesheim, 1989; Schriesheim *et al.*, 1991). Similarly, the use of reward in a knowledge-based context has been found to disable rather than enable knowledge acquisition (Politis, 2005), because KWs typically view reward administration as manipulative (Amar, 2002).

Contrarily, other studies reported a positive impact of reward power on certain work outcomes such as entrepreneurial success (Aguinis *et al.*, 2008). Reward is also claimed to be a powerful motivator in influencing KWs' behavior (DeTienne *et al.*, 2004; Forstenlechner and Lettice, 2007). Thus, organizations need to reform their culture and reward system so that employees are encouraged to generate, implement innovative ideas (Jong and Hartog, 2007), and share their knowledge with others. As most researchers support the notion that incentives can be used to influence KWs, we state our next hypothesis as follows:

H3. Leaders ascribed with greater reward power leads to a greater extent of knowledge acquisition, dissemination, and utilization practices within the organization.

Referent power

A leader with referent power is someone the subordinates aspire to be like and therefore emulate. Effective leaders have been associated primarily with referent power because this power is positively correlated with subordinate satisfaction and performance (Hinkin and Schriesheim, 1989), and entrepreneurial success (Aguinis *et al.*, 2008).

In a knowledge network, leaders are expected to adopt personal mentoring and internal consulting (Ribiere and Sitar, 2003) to encourage trust building and social interaction that are essential for knowledge sharing (Connelly and Kelloway, 2003). Naturally, a leader who displays qualities that supports knowledge dissemination will become a role model for KWs to emulate. Thus, we hypothesize:

H4a. Leaders ascribed with greater referent power leads to a greater extent of knowledge dissemination practices within the organization.

However, referent power may not have the intended influence upon knowledge acquisition and implementation. KWs are independent individuals who decide what knowledge they want to contribute and how they intend to use it (Politis, 2005). They trust their personal expertise and do not deem their leader to be correct based on the leader's personal appeal (Politis, 2005). Thus, the following hypothesis was formulated:

H4b. Leaders ascribed with greater referent power has no effect upon the extent of knowledge acquisition and utilization practices within the organization.

Expert power

Expert power originates when the agent is perceived to have valued skill, knowledge, experience, or judgment that others need and do not possess themselves. Past research in organizational settings on power signifies that expert power is positively correlated with entrepreneurial success (Aguinis *et al.*, 2008), reduced turnover intentions (Lo and Ramayah, 2007), and subordinate satisfaction and performance (Hinkin and Schriesheim, 1989; Yukl, 2010). The same argument applies to a knowledge-based organization where knowledge leaders need to grasp the fact that power derived from the possession of specific knowledge rather than hierarchical position, facilitates the influence process (Macneil, 2003).

In essence, although KWs possess wider skills and expertise (Janz and Prasarnphanich, 2003; Macneil, 2003), in many situations they still seek expert

guidance indirectly from their respective leaders to solve their problems, without even realizing it (Amar, 2002). Hence, influencing KWs with expertise requires leaders to lead through intellectual power (Ribiere and Sitar, 2003). Leaders with expertise can embrace the role of knowledge coaches or experts to help inspire KWs to develop new ideas or stimulate their creative streak (Jong and Hartog, 2007; O'Regan and Ghobadian, 2004). Fundamentally, in order to clinch the role of an effective facilitator and stimulator in a knowledge-based environment and encourage people to create and utilize knowledge, the leader needs to possess highly developed expertise.

On the contrary, the impact of expert power on knowledge dissemination cannot be clearly described. It is unclear how leaders' possession of expertise and knowledge could encourage knowledge dissemination practices among KWs. A possible justification could be that the willingness of leaders to share their expertise with subordinates inculcates the values of sharing, which encourages the emulation of knowledge dissemination practices among KWs (Connelly and Kelloway, 2003). Therefore, we offer the following hypothesis:

H5. Leaders ascribed with greater expert power leads to a greater extent of knowledge acquisition, dissemination, and utilization practices within the organization.

Boundary condition on bases of social power

While perceived bases of social power have a number of important consequences, there is some variability in the way the individuals respond to more or less influential leaders in the workplace (Ansari, 1990; Aguinis *et al.*, 2008). Clearly, although personal power (expert and referent) yields positive outcomes in general (Yukl, 2010), boundary conditions on the effect of social power do indeed exist. One such conditional variable we have identified is organizational size. The divergence in size and operation of small- and large-firms results in discrepancies in these organizations' needs for leader behavior. Thus, we hypothesize:

H6. The impact of leaders' bases of power on KM practices is moderated by organization size.

In general, smaller firms are less hierarchical, less formalized, and have collaborative relationships due to the smaller number of employees (Kuan and Aspinwall, 2004). In contrast, larger firms are characterized by high complexity and reduced flexibility (Kuan and Aspinwall, 2004; O'Regan and Ghobadian, 2004). This causes larger organizations to lean towards highly bureaucratic structures with rules, standards, procedures, necessary authorization, warnings, and punishment to manage their employees (O'Regan and Ghobadian, 2004; Yukl, 2010). Basically, legitimacy and formalization seem to be a norm in larger organizations. This implies that the negative impact of legitimate and coercive power (elements of formalization) on KM practices is weaker in larger organizations. Hence, we hypothesize:

H6a. The negative impact of legitimate and coercive power on KM practices is stronger in small firms compared to larger firms.

In larger organizations, it is difficult for leaders to interact with subordinates and maintain interpersonal relationships due to a large number of subordinates

(Yukl, 2010). Contrarily, leaders in smaller firms are able to cultivate personalized relationships with their subordinates. This facilitates the distribution of rewards such as the assignment of interesting tasks and personal recognition (O'Regan and Ghobadian, 2004). Thus, we conjecture:

H6b. The positive impact of reward power on KM practices is weaker in larger firms compared to smaller firms.

Smaller firms have limited expert resource pool due to the smaller number of employees (Kuan and Aspinwall, 2004). In addition, resource constraint and lack of maturity deprives smaller firm of knowledge repositories (Desouza and Awazu, 2006). Hence, there is a heavy reliance on leaders in smaller firm to translate knowledge into operational plan and control the transfer of knowledge within their organizations (Kuan and Aspinwall, 2004; O'Regan and Ghobadian, 2004). Leaders in small firms are expected to advise subordinates when needed and show them how to view a problem from a different perspective (O'Regan and Ghobadian, 2004). Therefore, we hypothesize:

H6c. The positive impact of expert power on KM practices is stronger in smaller firms compared to larger firms.

Smaller enterprises ideally have flatter organizational structure and shorter communication lines between employees and management (Kuan and Aspinwall, 2004). Hence, leaders are capable of building higher level of trust and personalized relationships with their employees (O'Regan and Ghobadian, 2004). As a leader's use of referent power is more observable in smaller firms, the effect of this power on KM practices would be greater in smaller organizations. Thus, we hypothesize:

H6d. The impact of referent power on KM practices is stronger in smaller firms compared to larger firms.

Method

Research site, sample, and procedure

This study examines, the effect of top management's power bases on the extent of KM practices in organizations. Therefore, the unit of analysis of this study is organization. At least two employees from middle level management – fitting the high (e.g. researchers) and moderate (e.g. manager, planners) categories of KWs as provided by Withey (2003) – were selected from each organization to respond to the survey. Respondents were asked to rate their degree of agreement or disagreement, with each statement related to leader behavior of the top management of the organization and the extent of KM practices within their organization.

We are aware of the possibility of common method variance that arises due to the use of common raters to provide the measures of both the predictor (leaders' power bases) and criterion (KM practices) variables. This could possibly affect the study's internal validity (Podsakoff *et al.*, 2003). Although respondents were exposed to similar independent and dependent measures, we created a psychological separation between the predictor and criterion variable as suggested by Podsakoff *et al.* (2003) to make it appear as though the measurement of the criterion variables is not related to the predictor variable. The respondents were initially asked to state their agreement with leader behavior items displayed by the top management in their

respective organizations. Then, they were asked to shift their attention to the organization practices that may or may not be performed in the organization. In addition, we assured the respondents that there was no right or wrong answers and what mattered most was the respondents' frank opinion. This was done to reduce the possibility of them attempting to link the answers for the predictor and criterion variable and provide answers as possibly expected by the researcher (Podsakoff *et al.*, 2003).

In order to test the impact of leaders' power bases in the knowledge-based environment, companies representing knowledge-based organizations should be chosen. Keeping this in view, Multimedia Super Corridor (MSC) status companies were selected as the research site. MSC companies are characterized by:

- a high number of KWs; and
- involvement in knowledge intensive industry sectors.

Hence, these companies are reflective of knowledge-based organizations, and were considered appropriate for the present study.

As organization size is the moderating variable of this research, stratified random sampling method was employed to ensure a fair representation of small- and large-enterprises. The population of MSC companies was divided into subpopulations of "small or medium" and "large" organizations based on the categorization by Multimedia Development Corporation (MDeC) and the Small and Medium Industries Development Corporation. According to MDeC, about 40 percent of the MSC companies are small- and medium-companies (with 50 or less employees) and the others are large companies (with more than 50 employees). A simple random sample was then taken from each stratum of size according to the population proportion – 40 percent from the small-and medium-stratum and 60 percent from the large stratum.

The questionnaires were distributed to 650 organizations. However, only 402 KWs representing 180 organizations returned the questionnaires, yielding to a response rate of 27.7 percent. Out of the 180 organizations, 66 organizations responded within the stipulated time (early responses) and the remaining 114 organizations responded late. With a high number of respondents who were given extension and persuaded to respond (late responses), there is a possibility of non-response bias. We compared the demographics of early respondents with those of late respondents as suggested by researchers such as Lin and Schaeffer (1995). Inferential statistics such as χ^2 and *t*-test were employed to determine if any statistical difference existed between early and late responses. In comparing the demographic profile of early and late response, no significant difference was found in terms of ownership ($\chi^2 = 0.00$, $p > 0.05$), industry sector ($\chi^2 = 3.400$, $p > 0.05$), and organization size ($\chi^2 = 1.242$, $p > 0.05$). A comparison in terms of the major predictor and criterion variables of the study also showed no significant differences of mean values of early and late responses.

As expected, the respondents were highly educated, with majority of them having at least a bachelor's degree (50 percent) and postgraduate qualifications (45.3 percent). The respondents met the minimum requirement of tenure in organization, with all of them having worked with the organization for at least one year. The KWs also had considerable amount of work experience, with most of them (78.5 percent) having worked for over three years. This implies that the participants were adequately informed about the leadership and KM practices within the company and had the required ability to complete the questionnaire.

Measures

Leaders' bases of power. We employed a 20-item measure to assess the five French and Raven (1959) bases of power (Hinkin and Schriesheim, 1989; Schriesheim *et al.*, 1991). Each power base was measured with four items. The respondents were asked to describe, on a seven-point scale (1 – strongly disagree; 7 – strongly agree), their degree of agreement or disagreement with each item that best represented their view about the leadership behavior of the top management in their respective organizations.

We conducted a confirmatory factor analyses (CFA) using Amos 16.0 to assess the distinctiveness of the five power bases. Three different measurement models were tested:

(1) one-factor model with all 20 items;

(2) two-factor power model based on a different yet commonly accepted conceptualization of power in the literature – position power (reward, coercive, and legitimate power) and personal power (expert and referent power) (Yukl, 2010); and

(3) five-factor model with five power bases treated as distinct factors.

The analysis confirmed that the five-factor model of power fitted the data reasonably well ($\chi^2 = 690.36$; NFI = 0.88; RMSEA = 0.09). This model resulted in a better fit as compared to an alternative nested model including all 20 observed variables and one latent factor ($\chi^2 = 3057.44$; NFI = 0.47; RMSEA = 0.21) and a two-factor model ($\chi^2 = 2666.94$; NFI = 0.54; RMSEA = 0.19). The advantage of the five-factor model over the one-factor model also implies that common source variance is not expected to cause a major threat concerning the study's internal validity (Podsakoff *et al.*, 2003). The coefficients alpha for the power subscales ranged between 0.89 and 0.93 (Table I). As expected, the power subscales were significantly inter-correlated with the *r*-values ranging between −0.09 and 0.83. As such, we examined five power bases as distinct dimensions, consistent with previous treatment of these power bases (Aguinis *et al.*, 2008; Hinkin and Schriesheim, 1989; Schriesheim *et al.*, 1991).

KM practices. Nine single-statement items were drawn from Darroch (2003) to measure KM practices employed within the organizations. The scale consists of three dimensions: knowledge acquisition, knowledge dissemination, and knowledge utilization. Each practice was measured with three items. The participants indicated on a seven-point scale (1 – never; 7 – always) the frequency with which these practices were performed in their organization.

The CFA analysis using Amos 16.0 demonstrated that the three-factor model of KM practices fitted the data reasonably well ($\chi^2 = 128.57$; NFI = 0.93; RMSEA = 0.10). This model resulted in a better fit as compared to an alternative nested model including all nine observed variables and one latent factor ($\chi^2 = 878.11$; NFI = 0.53; RMSEA = 0.28). The superiority of the three-factor model over the one-factor model entails that common source variance is not a serious threat to the study's internal validity (Podsakoff *et al.*, 2003).The KM practices subscales were reliable with the coefficient alpha values exceeding the recommended level of 0.70 (Nunnally and Bernstein, 1994, see Table I). As expected, the subscales were significantly inter-correlated with the *r*-values ranging between 0.28 and 0.43.

Variables	1	2	3	4	5	6	7	8	9	10
1. Reward power	*0.91*									
2. Coercive power	−0.17*	*0.89*								
3. Legitimate power	−0.05	0.87**	*0.93*							
4. Referent power	0.36**	0.53**	0.68**	*0.89*						
5. Expert power	0.71**	−0.39**	−0.23**	0.24**	*0.92*					
6. Knowledge acquisition	0.48**	−0.42**	−0.39**	0.04	0.61**	*0.90*				
7. Knowledge dissemination	0.31**	−0.26**	−0.22**	0.01	0.42**	0.32**	*0.83*			
8. Knowledge utilization	0.46**	−0.20**	0.09	0.15**	0.53**	0.52**	0.36**	*0.90*		
9.Organization size[a]	0.11	0.07	0.09	0.14	0.10	−0.06	0.11	−0.08	_[c]	
10. Organization ownership[b]	−0.04	−0.34**	0.42**	0.29**	−0.08	−0.30**	−0.09	−0.06	−0.06	_[c]
M	4.88	3.47	4.16	4.71	5.22	4.05	4.03	4.71	1.40	1.67
SD	1.04	1.38	1.39	0.92	1.05	1.33	1.23	1.20	0.49	0.47

Notes: $N = 402$; *$p < 0.05$; **$p < 0.01$; diagonal entries in italics indicate coefficients alpha; [a]coding: SME = 1, large = 2; [b]coding: foreign = 1, local = 2; [c]single item categorical measure

Table I.
Descriptive statistics, coefficients alpha, and zero-order correlations of all study variables

Results

Test of agreement

When the unit of analysis is a homogeneous group whereas the unit of measurement is individuals within the group, the individual scores obtained needs to be aggregated to reflect or represent the group perception (James, 1982). Aggregation of data are appropriate if within group inter-rater agreement on the theorized group level can be demonstrated (George and James, 1993; James *et al.*, 1993).

As organizations are the unit of analysis of this study, data gathered from KWs from each organization needs to be aggregated at the organization level. Prior to aggregating data to reflect a higher level of analysis, a test of agreement was conducted using the multi-item estimator (r_{WGJ}) suggested by James *et al.* (1984). The further the r_{WGJ} value departs from 1.00, the lower the level of inter-rater agreement (James *et al.*, 1984). All of the 180 data sets had acceptable level of agreement ranging from 0.69 to 0.98. Hence, individual scores were aggregated to the group level through the calculation of group mean scores (James *et al.*, 1984; George and James, 1993). Thus, subsequent analyses were based on the aggregated scores.

Test of hypotheses

We tested the six major hypotheses by means of a four-step hierarchical multiple regression analysis. Given that the level of KM practices has been reported to differ by the country of origin of the organization (EPU, 2009), we controlled for the effects of organization ownership (foreign/local ownership) at Step 1. As all three KM practices are said to be interrelated, we also controlled for the effect of other KM practices (except the focal dependent variable) at Step 1 to control for the possible effect these practices could have on each other. For example, while analyzing knowledge acquisition as a criterion variable, we controlled for knowledge dissemination and knowledge utilization at Step 1.

Next, we entered the five power bases in Step 2. The variance inflation factor did not exceed ten and the values were within 2.5-6.1. In addition, the tolerance values were generally within the range of 0.16-0.38. There were no two or more variables with a proportion variance of above 0.90, indicating that there was no serious multicollinearity problem among the predictors.

Finally, we entered the moderator (organization size) and the five interaction terms (predictor $\times$ moderator) at Steps 3 and 4, respectively. Significant interactions were then examined graphically. Table II reports a summary of the hierarchical regression analysis results.

Taking into consideration the effect of the control variable, it was noted that power bases accounted for a total of 16, 7, and 7 percent of the variance, respectively, in knowledge acquisition, dissemination, and utilization. *H1* was partially substantiated with legitimate power negatively influencing only knowledge acquisition practices. *H2*, *H3*, *H4a*, and *H4b* was not supported in that coercive, reward, and referent power had no significant relationship with any of the abovementioned KM practices. Finally, *H5* was partially supported with expert power positively influencing knowledge acquisition and dissemination practices.

Of interest were significant interactions – Figure 2 and Table II. As hypothesized, the first interaction (Figure 2(a)) indicated that the negative impact of leaders' legitimate power on knowledge acquisition was greater in smaller organizations.

Variable	Knowledge acquisition	Knowledge dissemination	Knowledge utilization
Step 1: control variables			
Organization ownership	−0.26	−0.02	−0.11
Knowledge acquisition	X	0.17*	0.48**
Knowledge dissemination	0.13	X	0.22**
Knowledge utilization	0.46**	0.27**	X
Step 2: predictors			
Reward power	0.08	0.01	0.09
Coercive power	0.10	0.04	−0.18
Legitimate power	−0.30*	−0.14	0.30
Referent power	−0.01	−0.04	−0.03
Expert power	0.36**	0.32*	0.18
Step 3: moderator			
Organization size	0.08	0.12	−0.11
Step 4: interaction terms			
Organization size × reward power	1.22	−3.14**	0.43
Organization size × coercive power	0.38	0.87	1.03*
Organization size × legitimate power	−1.06**	0.82	−0.74
Organization size × referent power	−0.02	0.35	−0.10
Organization size × expert power	1.33	1.89	0.31
R^2 *change*			
Step 1	0.36**	0.15	0.32**
Step 2	0.16**	0.07**	0.07**
Step 3	0.01**	0.01	0.01*
Step 4	0.03**	0.09*	0.02**

Notes: *$p < 0.05$; **$p < 0.01$; X = this was our focal dependent variable and hence was not included in the model as the control variable; results did not change with centered data; knowledge management – KM

Table II.
Hierarchical regression: organization size as a moderator of the relationship between power bases and KM practices

Next, we found the effect of reward power on knowledge dissemination to be greater in small organizations (Figure 2(b)). Finally, coercive power was found to negatively affect knowledge utilization practices in smaller firms and had no effect in larger organizations (Figure 2(c)). The findings of this study will be discussed in the subsequent section.

Discussion

As expected, all three KM practices were interrelated and significantly influenced each other. When knowledge was acquired, people tend to share and apply knowledge at a greater degree. Similarly, when organizational members applied knowledge, new knowledge was gained (knowledge acquisition) in the process and knowledge was also more widely shared (knowledge dissemination). In addition, when knowledge was extensively shared, application of knowledge is further stimulated. Our finding lends empirical support for the need to look at these practices in totality.

Besides, the interdependence among KM practices, leader's power bases had a significant influence on the extent of these KM practices. Our study found that the theory of power and social influence – when applied in a knowledge-based context-provided some interesting insights. First, knowledge acquisition practices can be enhanced through leaders with lesser legitimate power and greater expert power.

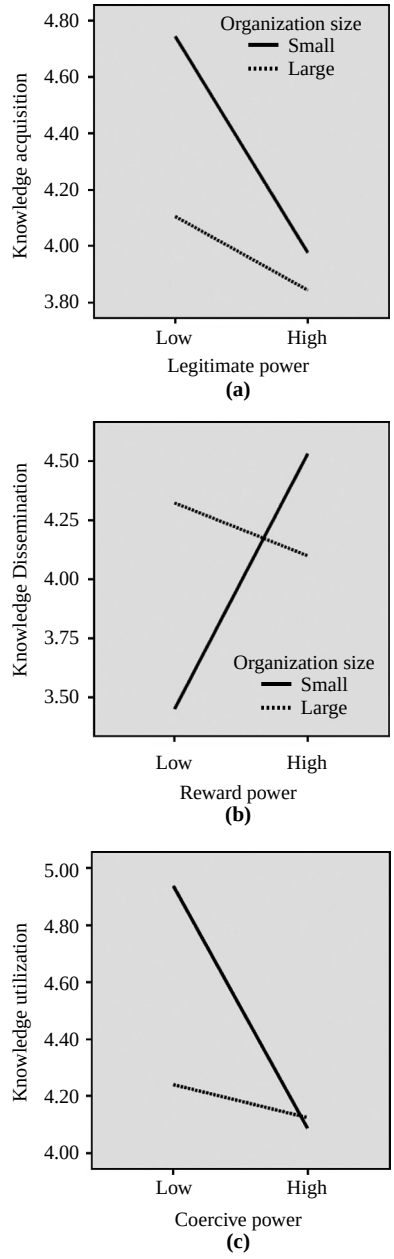

Figure 2.
Moderating effects of organization size on leader's power-KM practices relationship

Second, knowledge dissemination practices were improved when top management leaders were ascribed greater expert power. In addition, the extent of knowledge dissemination practices was greater in smaller firm when their leaders had greater reward power. Third, only coercive power had a negative effect on the extent of

knowledge utilization practices. However, this impact was only evident in smaller organizations. These pertinent findings are further discussed below.

Leaders attributed with greater legitimate power had an adverse effect on knowledge acquisition practices. Moreover, this negative impact was greater in smaller firms. Evidently, smaller organizations provide a structure that is flatter, informal, decentralized, and less bureaucratic (Serenko *et al.*, 2007). Hence, unlike large organizations, the closeness of the leaders and subordinates in small firms further reduces the acceptance of legitimate power. Fundamentally, top management leaders – especially in smaller firms – should no longer rely upon their organizational position to prescribe knowledge acquisition practices. Being experts themselves, KWs enjoy greater autonomy, thus disregarding close supervision or direct control (Janz and Prasarnphanich, 2003; Kubo and Saka, 2002; Macneil, 2003).

Leaders with expert power had the potential to improve the extent of knowledge acquisition and dissemination practices. This is congruent with the findings by Politis (2005) who found that expert power in particular had a positive effect on knowledge acquisition. This finding denotes that leaders are expected to be able to share with KWs what they do not already know and fuel thought-provoking ideas that leads to the acquisition and development of new knowledge for the benefit of the organization (Amar, 2002; Macneil, 2003). Leaders' expert power had similar effect on knowledge dissemination practices. Noting their leaders' willingness to share their expertise, KWs are encouraged to emulate similar behavior (Connelly and Kelloway, 2003; Migdadi, 2009).

Surprisingly, we found top leaders reward power to have no significant effect on any of the KM practices. This probably implies that KWs normally get involved in KM practices for their own interest (Gal, 2004) and intrinsic satisfaction and not merely extrinsic rewards. Another viable explanation could be a clear link between their contribution and top management leaders' ability to reward is lacking. Being at the top, the gap could pose as a barrier to timely and appropriate rewarding. Perhaps, when leaders are closer to employees, the results would be different as they would be better able to observe and reward accordingly.

However, although the main effect of reward power on these KM practices was not significant, a positive effect on knowledge dissemination was noted in the context of smaller firms. Probably, the smaller number of employees allows top leaders to better observe and reward knowledge dissemination practices (O'Regan and Ghobadian, 2004). Furthermore, unlike in larger organizations, the lack of systematic storing and sharing of data and information in repositories in small organizations (Serenko *et al.*, 2007) increases the dependence on dialog among employees and informal discussions (Desouza and Awazu, 2006). This shifts the dependence on voluntary sharing of knowledge by employee through informal interactions. Given that knowledge is power, voluntary sharing is yet to appeal to KWs (DeTienne *et al.*, 2004). Hence, there is a strong need for leaders to display reward power to encourage knowledge dissemination in smaller firms.

Next, our study confirms that threat and punishment no longer works in a knowledge-based context. It is likely that being independent, KWs decide when, what, and how they will acquire, share, and utilize their knowledge. Any use of force or threat will not be able to compel KWs to be involved in KM practices. Interestingly, the negative impact of coercive power on knowledge utilization was contingent on

organization size. We found that too much of coercion to get employees to utilize knowledge had a detrimental effect in smaller organizations. Again, this can be attributed to the informal structure characterized by strong interpersonal relationships and collaborative culture (Migdadi, 2009; Serenko *et al.*, 2007). Use of threat to coerce KWs to utilize knowledge in an environment that is based on relationship and trust would definitely stir feelings of dissatisfaction. This was, however, not the case with the larger entities. Most likely, the existence of hierarchy and authority is a norm in numerous large organizations – therefore, neutralizing the negative effect of coercive power on KM practices.

Finally, leaders' referent power no longer encompasses the anticipated influence on KWs. As with the findings of Politis (2005), this implies that the use of personal magnetism to influence KWs is ineffective. Although they may like and respect the leader, this would not be the influencing factor in encouraging their increased involvement in KM practices.

Implications for theory

This study has obvious theoretical ramifications, as this research has bridged some important gaps in the leadership and KM literature. The findings of this study has further reinforced that leadership is needed to promote KM project improvement. In addition, this study has helped clarify the effect of leaders' power bases in a knowledge-based context. Gapp (2002) highlighted that it is necessary for knowledge leaders to change their style to match the major upheaval of the system of intense knowledge. With the workforce evolving to become more knowledge-based, leaders must be prepared to lead using unconventional people management practices (Ribiere and Sitar, 2003).

Reflecting on the need for power-influence approach to leadership, this study provides useful insights about the significance of knowledge leaders' power bases with emphasis on new approaches needed in knowledge-based organizations. Furthermore, the findings that organization size moderates the relationship between leader's power and KM practices suggest that managers need to modify the level of power displayed especially coercive, legitimate, and reward power in accordance with the size of the organization.

Implications to practice

Overall, our findings suggest that knowledge leaders should be able to strike a balance of various power bases in order to exert influence over KWs and improve the extent of KM practices in their organization. Knowing the impact of these power bases on the extent of KM practices in organizations, top management leaders can work at managing the impression of others. They should focus on enhancing certain power bases such as their expert power. In addition, leaders – especially those in smaller firms – can also ensure they are seen as a favorable leader with less coercive and legitimate power. It is, therefore, hoped that this study will enlighten knowledge leaders at the top level about the substance of influence in shaping their KM project success.

Limitation and directions for future research

While the study makes important contributions, inadvertently there are some limitations underlying this study. First, only about 7-16 percent of the variance in KM practices is associated with leaders' power (Table II). Hence, there could be other

variables that could influence the extent of KM practices within an organization that was beyond the scope of this study. Future studies could incorporate other important variables such as the culture, structure, and human resource practices of organizations into the model of this study. These variables could further contribute some useful insights on how to improve the level of KM practices in organizations.

Second, this study examined the top management's power bases and its effect on KM practices. However, it is not clear whether this level analysis would be applicable in cases of dyads or small group analysis. We suggest this study should be replicated but at different levels such as individuals, dyads, and groups to further explore the relationship between leaders' power bases and KM practices. This could provide a more comprehensive analysis of the effect of leaders' ability to influence on KM practice when considered at different levels of management.

Probably, there could be indirect effect of leaders' power on each KM practices which this study had not explored. For example, although leaders' legitimate power did not significantly influence knowledge dissemination and utilization practices, this power base could probably indirectly influence these practices through knowledge acquisition. Future research should attempt to expand this model and analyze the suggested interaction effects.

Conclusion

This study contributes to the theory of social power and influence in that it examines the relationship between top management's social power and KM practices. The present results suggest leaders in knowledge-based organization need to use more of expert power and less legitimate power in influencing KWs to be involved in certain KM practices. Top management leaders in small organizations need to be aware that certain power bases works for them (e.g. reward power) and some works against them (e.g. coercive and legitimate power) when compared to their counterparts in large firms. Keeping this in mind, leaders need to manage their power profile accordingly.

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Corresponding author
Sharmila Jayasingam can be contacted at: sharmila@um.edu.my